Kindly charge any additional fee, or credit overpayments, to Deposit Account No. 50-0281.

Respectfully submitted,

John J. Karasek
Reg. No. 36,182
Attorney for Applicants

Date: March 14, 2002
Prepared by: L. George Legg
Reg. No. 34,208
Telephone: 202-404-1559

VERSION WITH MARKINGS TO SHOW CHANGES MADE AND NEW CLAIMS ADDED

In the claims:

Claim 16 has been amended as follows:

16. (Amended) An adaptive signal processing system comprising:

a means for receiving a plurality of input signals corresponding to the same target signal;

a means for inputting the input signals into a plurality of building blocks arranged in a cascade configuration for sequentially decorrelating each of the input signals from each other of the input signals;

a means for generating a single filtered output signal;

wherein each building block includes a means for receiving a local main input signal, a means for receiving a local auxiliary input signal, and a processing means for calculating a complex adaptive weight, and generating a local output signal, utilizing the complex adaptive weight.

9

a

The following claims, claims 17-24, have been added by the present amendment:

17. An adaptive signal processing system as in claim 16, wherein the complex adaptive weight w_{med} comprises: a sample median value of the real part of a ratio of a main input weight training data signal to an auxiliary input weight training data signal, and a sample median value of the imaginary part of the ratio of a main input weight training data signal to an auxiliary input weight training data signal.

18. An adaptive signal processing system as in claim 16, wherein the complex adaptive weight w_{med} comprises a sample median value of the real part of a ratio of a main input weight training data signal to an auxiliary input weight training data signal.

19 . An adaptive signal processing system as claimed in claim 16,

wherein each building block generates the complex adaptive weight, w_{med}, by solving the equation:

$$w_{med} = \underset{k=1\,to\,K}{MED}\left[real\left(\frac{z(k)^*}{x(k)^*} \right) \right] + j\left\{ \underset{k=1\,to\,K}{MED}\left[imag\left(\frac{z(k)^*}{x(k)^*} \right) \right] \right\}$$

where K is the number of weight training data samples, z is the local main input signal, j is the unit imaginary vector, and x is the local auxiliary input signal; and

generates the local output signal, r, by solving the equation:

$r = z - w^*_{med}\, x$.

20. An adaptive signal processing system for receiving a plurality input signals corresponding to a common target signal and for sequentially decorrelating the input signals to cancel the correlated noise components therefrom, the adaptive signal processing system comprising:

a plurality of building blocks arranged in a cascaded configuration having N input channels and N-1 rows of building blocks, for sequentially decorrelating each of the input signals from each other of the input signals to thereby yield a single filtered output signal;

wherein each row of building blocks has a first end building block which is fed originally by a main input channel and a last end building block opposite said first end building block,

wherein each building block includes:

a local main input channel which receives a local main input signal,

a local auxiliary input channel which receives a local auxiliary input signal, and

a processing mechanism that calculates a complex adaptive weight and generates a local output signal, utilizing the complex adaptive weight;

wherein said last end building block supplies the local output signal to a separate local

output channel for follow on processing.

21. An adaptive signal processing system as in claim 20, wherein the Nth input channel is supplied for follow on processing.

22. An adaptive signal processing system as in claim 20, wherein said complex adaptive weight comprises: a sample median value of the real part of a ratio of a main input weight training data signal to an auxiliary input weight training data signal, and a sample median value of the imaginary part of the ratio of a main input weight training data signal to an auxiliary input weight training data signal.

23. An adaptive signal processing system as in claim 20, wherein said complex adaptive weight comprises a sample median value of the real part of a ratio of a main input weight training data signal to an auxiliary input weight training data signal.

24. An adaptive signal processing system as in claim 20, wherein said complex adaptive weight w_{med} is generated by solving the equation:

$$w_{med} = \underset{k=1\,to\,K}{MED}\left[real\left(\frac{z(k)^*}{x(k)^*}\right)\right] + j\left\{\underset{k=1\,to\,K}{MED}\left[imag\left(\frac{z(k)^*}{x(k)^*}\right)\right]\right\},$$

where K is the number of weight training data samples, z is the local main input signal, j is the unit imaginary vector, and x is the local auxiliary input signal; and the local output signal r is generated by solving the equation:

$$r = z - w^*_{med}\, x.$$